Numeracy Practice Tests 1, 2 and 3

Calculator and Non-calculator

Year 9

Numeracy Practice Tests are designed
to assist with preparation for NAPLAN

TEACHER BOOK

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Numeracy Practice Test
Year 9 – Answers

Practice Test 1 – Calculator allowed

Student Details

First Name

Last Name

Today's Date is: _____

Test Instructions

You have 40 minutes to complete this test.

You are **allowed** to use a calculator.

You should use a pencil to write your answers or shade in the bubble.

If you make a mistake, rub it out thoroughly.

The following test has been designed by 3P Learning to prepare students for the National Assessment Program Numeracy Test. This test is to be used for revision purposes only. 3P Learning does not guarantee that the format of this test is the same as an actual test.

1 **Calculate 54.32 × 0.4356 and round to 2 decimal places.**

23.66

Write one number in the box.

2 **780 000 000 000 can be represented as:**

0.78×10^{14}	78×10^{12}	7.8×10^{12}	78×10^{11}	7.8×10^{11}
○	○	○	○	●

Shade one bubble.

3 **Calculate: $\sqrt{36/4} + \sqrt{49}$**

16	10	37/4	25	15
○	●	○	○	○

Shade one bubble.

4 **Calculate the answer to two decimal places:** $\dfrac{9 \times 7.63}{4 \times 3.7}$

5.02	4.55	0.22	4.64	63.52
○	○	○	●	○

Shade one bubble.

5 **What is the area of the following parallelogram?**

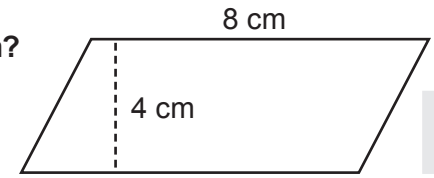


Diagram not drawn to scale

24 cm^2	12 cm^2	32 cm^2	16 cm^2	28 cm^2
○	○	●	○	○

Shade one bubble.

6 **What is the value of b, if $20 - b - 14 + 3b = 10$**

2	3	9	6	4
●	○	○	○	○

Shade one bubble.

7 What is the surface area of a cube if the length of its edges is 2 cm?

$12\ cm^2$	$6\ cm^2$	$32\ cm^2$	$24\ cm^2$	$4\ cm^2$
○	○	○	●	○

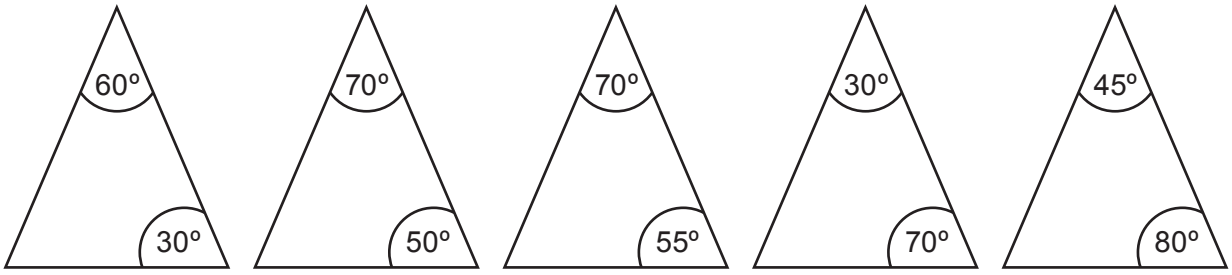
Shade one bubble.

8 What is the value of $x^2 - 3x + 3$ if $x = 5$

37	43	10	18	13
○	○	○	○	●

Shade one bubble.

9 Which triangle shows the correct angles for an Isosceles triangle?



○	○	●	○	○

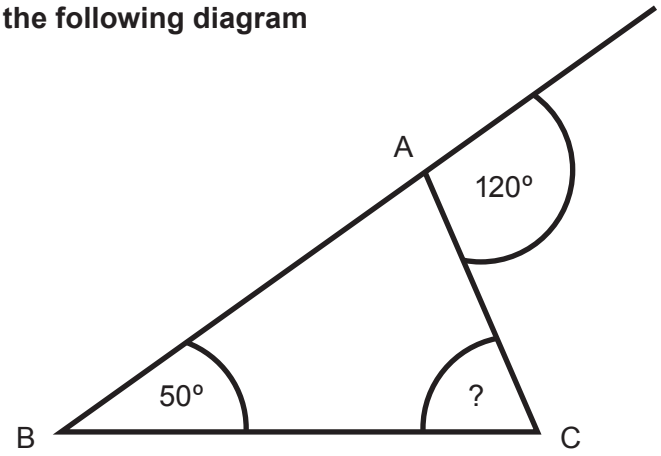
Shade one bubble.

10 James eats x apples and Nadia eats 3 more apples than James. If, together, they ate 34 apples, what equation represents the amount of apples eaten?

$x + 34 = 3$	$2x + 3 = 34$	$34 + 2x = 3$	$2x = 34$	$x + 3 = 34$
○	●	○	○	○

Shade one bubble.

11 **In the following diagram**



$\angle A\hat{C}B =$

10° ○ 55° ○ 180° ○ 70° ● 50° ○

Shade one bubble.

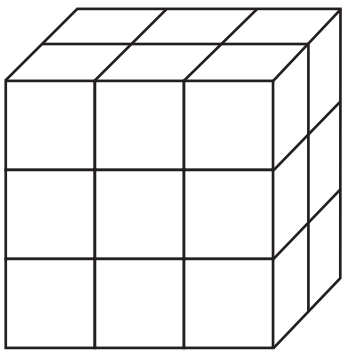
12 **Find the value of y:**

$$3^y = 81$$

$y =$ 4

Write one number in the box.

13 **How many small cubes cannot be seen from this view of the prism?**



9 ○ 12 ○ 16 ○ 15 ○ 4 ●

Shade one bubble.

14 **Brandon is 5 years younger than his brother. The product of their ages is the same as their father's age. If their father is 50, how old is Brandon?**

18	10	15	12	5
○	○	○	○	●

Shade one bubble.

15 **In your cupboard you have 4 pairs of red socks and 7 pairs of blue socks. What is the ratio of blue pairs to the total number of pairs?**

7 : 11

Write the answer in the box.

16 **A painting company paints houses at a rate of 70 houses every 5 days.**

Which rate of painting houses is the equivalent to this?

50 houses in 6 days	140 houses in 7 days	20 houses in 2.5 days	210 houses in 15 days	270 houses in 30 days
○	○	○	●	○

Shade one bubble.

17 **Mrs. Ling asked her class to write a report. If she has a total of 189 pages, and each student submitted an average of 7 pages then how many students are in Mrs. Ling's class?**

25	27	29	30	24
○	●	○	○	○

Shade one bubble.

18 **Calculate the value of $12a^2b - 6a$ if $a = 2$ and $b = 3$**

132

Write one number in the box.

19 **Use the area and length of the base in the following right angle triangle to find the missing height.**

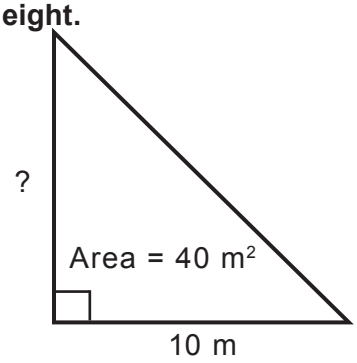


Diagram not drawn to scale

- ○ 4 m
- ○ 5 m
- ● 8 m
- ○ 16 m
- ○ 10 m

Shade one bubble.

20 $\frac{61.07}{31.33} \times (21.04 - 15.03)^2$ **is closest to:**

70	–185	98	69	71
●	○	○	○	○

Shade one bubble.

21 **If an aeroplane departs at 11:27 am and travels for 2 hours and 38 minutes, what time will it arrive at its destination?**

1:05 pm	2:38 pm	1:38 pm	2:05 pm	3:05 pm
○	○	○	●	○

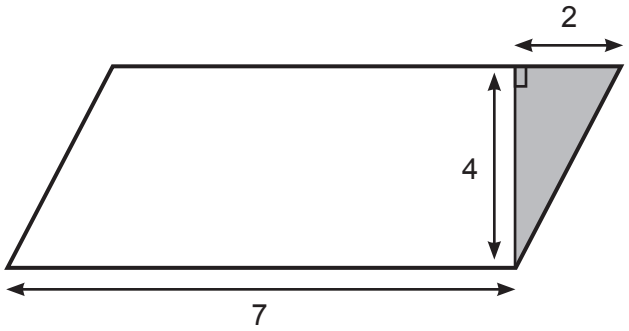
Shade one bubble.

22 **Approximate the following to the nearest whole number:** $\frac{44.5 + \sqrt{10}}{(6.09)}$

8

Write one number in the box.

23 **What is the area of the unshaded quadrilateral?**



13	20	32	36	24
○	○	○	○	●

Shade one bubble.

24 **Calculate the surface area of the following object.**

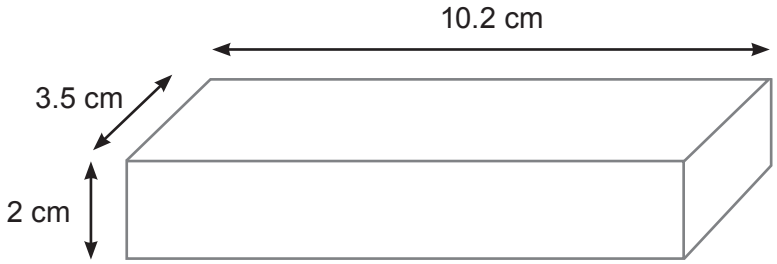


Diagram not drawn to scale

71.4 cm^2 ○ 126.2 cm^2 ● 63.1 cm^2 ○ 15.7 cm^2 ○ 142.8 cm^2 ○

Shade one bubble.

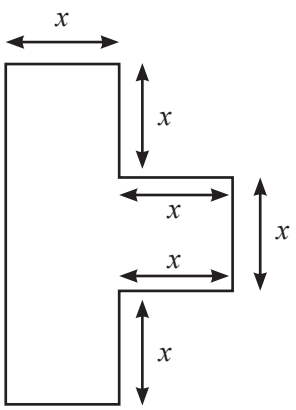
25 **Juan's cupboard has red, blue, green, yellow and orange socks. The probability of Juan finding the different colour socks is given in a table below. What is the probability of Juan finding green socks?**

Colour	Red	Blue	Green	Yellow	Orange
Probability	0.15	0.2	?	0.05	0.35

0.25

Write the answer in the box.

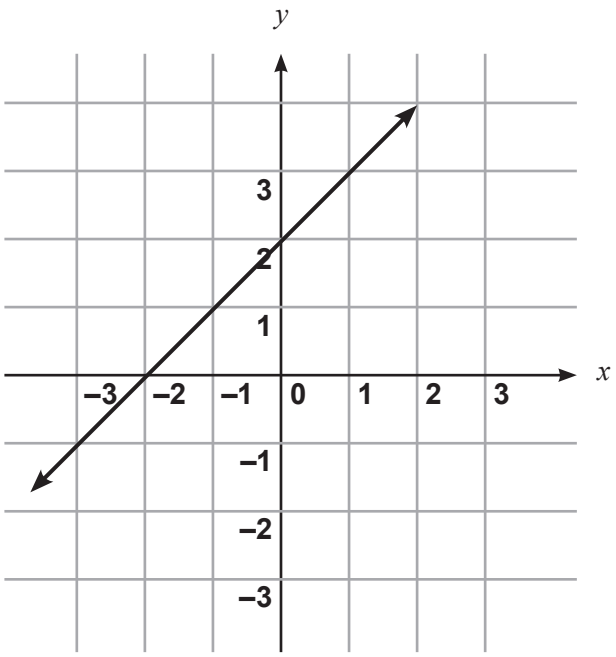
26 **The following diagram represents Alex's bedroom. Which expression gives the area of the bedroom?**



● $4x^2$
○ $2x^2$
○ x^2
○ $3x^2$
○ $4x$

Shade one bubble.

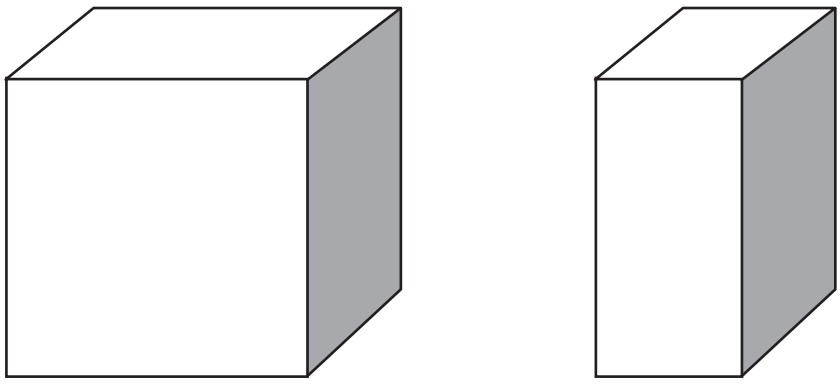
27 **The equation of the line is:**



- ○ y = x – 2
- ○ y = –x + 2
- ● y = x + 2
- ○ y = – x – 2
- ○ y = 2x

Shade one bubble.

28 **A cube of side length 2 cm is cut in half. How much smaller is the surface area of the new block?**



8 cm^2	12 cm^2	4 cm^2	1 cm^2	2 cm^2
●	○	○	○	○

Shade one bubble.

The following table is required for the next two questions. The table represents the number of medals won by the top three countries at the 2008 Olympic Games.

Medal Table				
	Gold	**Silver**	**Bronze**	**Total**
China	51	21	28	100
USA	36	38	36	110
Russia	23	21	28	72
Total	**110**	**80**	**92**	**282**

29 **If all 282 medals are placed in a bag, what is the probability a gold medal from the USA would be drawn out the bag?**

$\frac{110}{282}$ ○ $\frac{36}{282}$ ● $\frac{36}{110}$ ○ $\frac{100}{282}$ ○ $\frac{23}{110}$ ○

Shade one bubble.

30 **In the above table, which country has a 1:1 ratio of gold and bronze medals?**

USA

Write the answer in the box.

END OF TEST

Numeracy Practice Test
Year 9 – Answers

Practice Test 1 – Non-calculator

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Last Name

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1 Which number is missing in the grey square in the following pattern?

3	6	9	12
7	10	13	16
11	14	17	20
15	18	21	

- ○ 25
- ○ 17
- ○ 16
- ● 24
- ○ 28

Shade one bubble.

2 In the following table, if you were to cross out all the prime numbers as well as the multiples of 5, then what number would remain?

2	5	7	11
13	16	19	25
29	30	31	37

16

Write one number in the box.

3 The following graph displays the number of students with different shoe sizes:

According to the column graph, what is the percentage of students who have a shoe size of 10 or more?

24%	8%	56%	68%	32%
○	○	○	○	●

Shade one bubble.

4 Solve for x: $4x + 4 = 2x + 10$

$x = 3$

Write the answer in the box.

5 $\sqrt{70}$ **is between:**

Shade one bubble.

9 and 10	8 and 9	7 and 8	5 and 8	6 and 7
○	●	○	○	○

6 **Which of these is halfway between** $\frac{3}{4}$ **and** $\frac{4}{5}$ **?**

Shade one bubble.

$\frac{31}{40}$	$\frac{16}{20}$	$\frac{3}{5}$	1	$\frac{29}{40}$
●	○	○	○	○

7 **A triangle has the following measurements:**

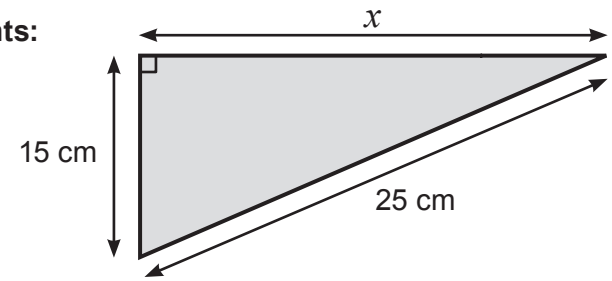


Diagram not drawn to scale

How long is x **?**

10 cm	35 cm	20 cm	29 cm	12 cm
○	○	●	○	○

Shade one bubble.

8 **Sophie spends 6 hours playing sport everyday.**
What percentage of the day does Sophie play sport?

25 %

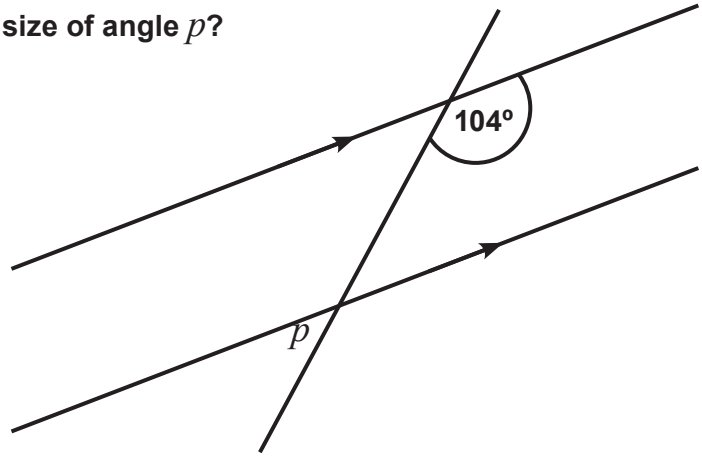
Write one number in the box.

9 **A plate of cupcakes has a ratio 3:4 for green cupcakes to blue cupcakes.**
How many blue cupcakes are there if there are 9 green cupcakes?

12

Write one number in the box.

10 What is the size of angle p?



76 °

Write the answer in the box.

11 Which is the largest number?

$\frac{23}{50}$	$\frac{15}{30}$	$\frac{19}{40}$	$\frac{59}{80}$	$\frac{31}{60}$
○	○	○	●	○

Shade one bubble.

12 What is the surface area of the following decahedron?

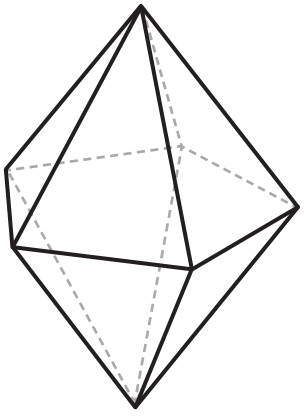
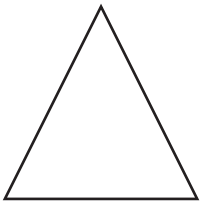


Diagram not drawn to scale

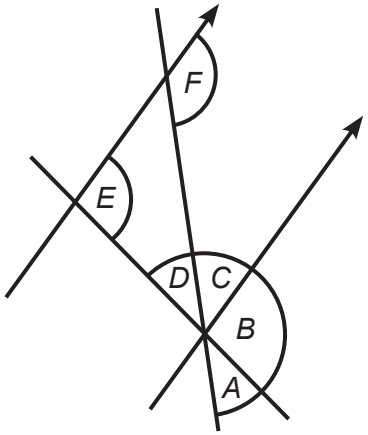


Area = 17 cm^2

85 cm^2	170 cm^2	204 cm^2	120 cm^2	51 cm^2
○	●	○	○	○

Shade one bubble.

Use the diagram for Question 13 and Question 14.



13 **Which angle is equal to E?**

D	C	A	F	B
○	○	○	○	●

Shade one bubble.

14 **Which single angle, if you add it to C, will make 180°?**

D	C	A	F	B
○	○	○	●	○

Shade one bubble.

15 **Solve for x:** $\frac{4x + 7}{3} - 1 = 4$

$x = 2$

Write the answer in the box.

16 **24 ÷ 0.6 =**

4	0.4	40	400	0.04
○	○	●	○	○

Shade one bubble.

17 **A sports team has 8 girls and 6 boys. What is the ratio of girls to the total number of players on the team?**

4 : 7

or 8 : 14

Write the answer in the box.

18 **The following table is a breakdown of how many people play soccer in a year 9 Class.**

	Boys	Girls
Play Soccer	6	7
Don't Play Soccer	8	9

If a student from the class is selected at random, what is the probability of selecting a girl who plays soccer?

$\frac{9}{30}$ ○ $\frac{9}{17}$ ○ $\frac{7}{30}$ ● $\frac{16}{30}$ ○ $\frac{13}{17}$ ○

Shade one bubble.

19 **If a temperature in Australia is recorded as 16°C and a temperature in America is recorded as –15°C then what is the difference in temperature between the two areas?**

31 °C

Write the answer in the box.

20 **Calculate the volume of the following right-angled triangular prism:**

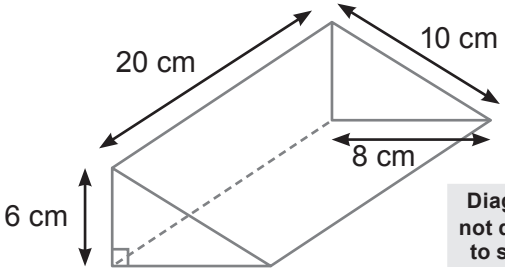


Diagram not drawn to scale

○ 1600 cm^3

○ 960 cm^3

● 480 cm^3

○ 1200 cm^3

○ 3200 cm^3

Shade one bubble.

21 **Which one of the following expressions has the same value as $\sqrt{3}(\sqrt{3} + \sqrt{9})$**

$\sqrt{3}$	$9\sqrt{3} + 3\sqrt{3}$	$3 + 3\sqrt{3}$	$9 + 3\sqrt{3}$	$3\sqrt{9} + 3\sqrt{3}$
○	○	●	○	○

Shade one bubble.

22 **7.47 – 3.78 = ?**

3.39	4.31	3.31	4.69	3.69
○	○	○	○	●

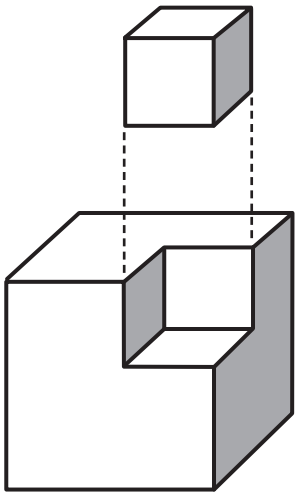
Shade one bubble.

23 **The values which make $y = 5x + 13$ and $y = 2x + 7$ both true are:**

$x = 3, y = 2$	$x = 3, y = -2$	$x = -2, y = 3$	$x = -3, y = -2$	$x = 32, y = -3$
○	○	●	○	○

Shade one bubble.

24 **A 1 cm cube is removed from a 2 cm cube, what is the volume of the remaining shape?**



7 cm^3	8 cm^3	1 cm^3	2 cm^3	4 cm^3
●	○	○	○	○

Shade one bubble.

25 **What is the following expression equal to:**

$$\left(\sqrt{275 + 125}\right)^2$$

15 × 15	20 × 20	16 × 16	17 × 17	21 × 21
○	●	○	○	○

Shade one bubble.

26 **A parking lot can fit 5 cars for every 8 m lengths on each floor. If each floor is 320 m long and there are 5 floors, how many cars are there when the parking lot is full?**

1200	1000	200	2560	512
○	●	○	○	○

Shade one bubble.

27 **When Bec went to sleep her clock showed 9:25 pm. When she woke up the next morning it showed 6:20 am. For how long did Bec sleep?**

8 hours	9 hours 15 minutes	9 hours 5 minutes	8 hours 55 minutes	8 hours 45 minutes
○	○	○	●	○

Shade one bubble.

The following information is required for questions 28, 29 and 30.

Omar spent $18 on a box of 50 pens. He sells the pens for $2 each.
Any profit he makes, after paying for the box of pens, is given to charity.

28 **If Omar only sells 19 pens, how much profit did he make?**

$20	$2	$1	$4	$0
●	○	○	○	○

Shade one bubble.

29 **If Omar wants to give $30 to charity. How many pens will he have to sell?**

19	15	26	20	24
○	○	○	○	●

Shade one bubble.

30 **Find an equation that expresses Omar's profit, *P*, in terms of the number of pens, *n*, that he sells.**

$P = 2n - 18$

Write the answer in the box.

END OF TEST

Numeracy Practice Test Year 9 – Answers

Practice Test 2 – Calculator allowed

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1 Calculate the answer:

$4.13 \times 0.07 =$

Shade one bubble.

- ● 0.2891
- ○ 0.3304
- ○ 2.891
- ○ 28.91
- ○ 33.04

2 Calculate the answer: $\frac{6 \times 5.14}{3 \times 10.1}$ = (correct to two decimal places)

1.02

Write the answer in the box.

3 The digits 4, 5 and 6 are substituted into the following equation:

$2a + b - c = 8$

If b is 4, the value of c is:

6

Write the answer in the box.

4 $(5.2 - 3.6^3) - \frac{32}{2.1 \times 14}$ is closest to:

Shade one bubble.

- ○ – 254
- ○ – 255
- ○ – 209
- ○ – 119
- ● 3

5 The square root of 2 600 is between:

Shade one bubble.

- ○ 0 and 10
- ○ 10 and 20
- ● 20 and 100
- ○ 100 and 1 000
- ○ 1 000 and 1 000 000

6 A test consists of 60 questions. It is structured so that each part of the English course is tested.

Comprehension: 24
Vocabulary: 9
Spelling: 12
Writing: 7
Grammar: 8

What is the ratio of Comprehension questions to Grammar questions?

- ● 3:1
- ○ 4:1
- ○ 1:3
- ○ 1:4
- ○ 3:4

Shade one bubble.

7 A block of chocolate contains 35 small identical squares of chocolate arranged in equally sized rows.

If there are 7 columns, the number of rows in the block of chocolate is:

- ○ 2
- ○ 3
- ○ 4
- ● 5
- ○ 6

Shade one bubble.

8 $a^x \times b^y = 675$

Shade one bubble.

a, x, b and y are all whole numbers.

If a = 5 and b = 3 then the values for x and y are:

- ● $x = 2$, $y = 3$
- ○ $x = 3$, $y = 2$
- ○ $x = 3$, $y = 5$
- ○ $x = 2$, $y = 5$
- ○ $x = 5$, $y = 2$

9 **K equals 3.25×10^2**

L equals 2.53×10^3

M equals 5.204×10^2

N equals 3.52×10^3

Shade one bubble.

List K, L, M and N in ascending order

- ○ K, M, N, L
- ○ N, M, L, K
- ○ N, L, M, K
- ● K, M, L, N
- ○ L, K, M, N

10 If $x = -4$ then $x^2 - 3x + 12$ is equal to:

Shade one bubble.

- ○ –16
- ○ 8
- ○ 12
- ○ 16
- ● 40

11 The difference between $\sqrt{8}$ and $\sqrt{2}$ is squared. The result is:

- ○ 1.96
- ○ 1.9881
- ● 2
- ○ 5.96
- ○ 6

Shade one bubble.

12 Peter's plane leaves Melbourne airport at 10:00 am on Tuesday morning on its way to Los Angeles (USA). The flight takes a total of 13.5 hours. Los Angeles time is 17 hours behind Melbourne time.

What day and time will Peter's flight arrive in Los Angeles?

Tuesday 6:30 am

Write the answer in the box.

13 How many edges are there on a cube?

Shade one bubble.

- ○ 4
- ○ 6
- ○ 8
- ● 12
- ○ 16

14 An isosceles triangle has two angles equal to 25°. What is the size of the third angle?

Shade one bubble.

- ○ 25°
- ○ 50°
- ○ 155°
- ● 130°
- ○ 180°

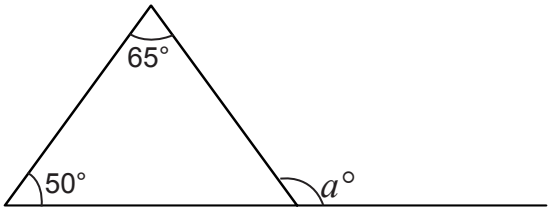
15 The rhombus ABCD has a perimeter of 43.12 cm.

Find the length of CD correct to 2 decimal places.

Shade one bubble.

- ○ 0.12 cm
- ○ 6.72 cm
- ○ 7.62 cm
- ○ 10.04 cm
- ● 10.78 cm

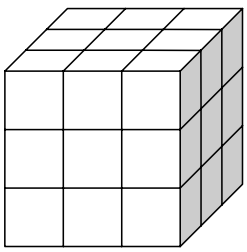
16 In the diagram shown below, the size of angle a is:



- ○ 180°
- ● 115°
- ○ 130°
- ○ 125°
- ○ 65°

Shade one bubble.

17 A cube is constructed from 27 smaller cubes (as shown).



The **outside** of the cube is painted red.

How many of the smaller cubes will have exactly 2 sides painted?

- ○ 2
- ○ 4
- ○ 8
- ● 12
- ○ 16

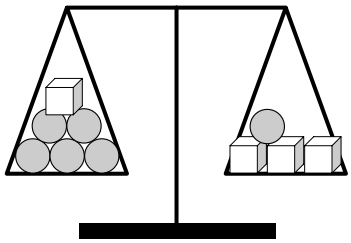
Shade one bubble.

18 John is 3 years older than his sister Amber. The product of their ages is the same as their father's age. If John's father is 40 years of age, how old is Amber?

5

Write the answer in the box.

19 The scales shown in the picture are balanced. If the cubes weigh 65 grams each, how much do each of the spheres weigh?

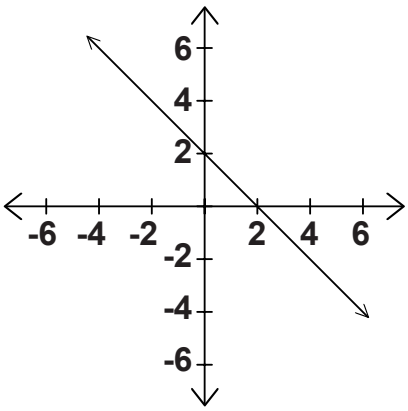


32.5	g

Write the answer in the box.

20 The equation of the line is:

Shade one bubble.



- ○ $y = x + 2$
- ○ $y = 2x$
- ○ $y = x - 2$
- ○ $y = -2x$
- ● $y = -x + 2$

21 Tom is x years old. Jane is 7 years older than Tom.

Together their ages total 24.

Which equation represents this family's age structure?

Shade one bubble.

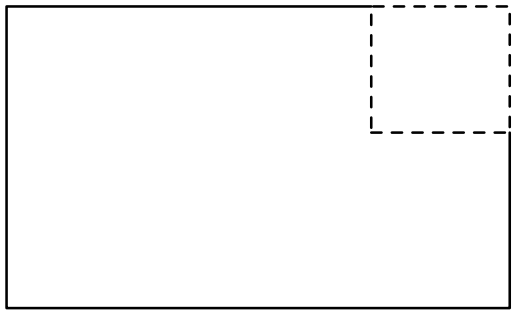
- ● $2x + 7 = 24$
- ○ $x + 7 = 24$
- ○ $2x - 7 = 24$
- ○ $x - 7 = 24$
- ○ $2x = 7$

22 Find the solution to the equation: $\frac{2x - 15}{7} = x + 5$

$x =$ –10

Write the answer in the box.

23 A rectangular sheet of paper measures 25 cm × 10 cm. A square of area 25 cm^2 is cut from one corner of the rectangle. The perimeter of the larger piece of paper is:



- ○ 25 cm
- ○ 225 cm^2
- ○ 35 cm
- ● 70 cm
- ○ 60 cm

Shade one bubble.

24 The area of a square is 80 cm^2. How long is each side?

- ○ 4 cm
- ● 8.94 cm
- ○ 9.48 cm
- ○ 20 cm
- ○ 40 cm

Shade one bubble.

25 Students in Mr. Finch's class had a total of $360.00 to spend at the school fete. Each student had on average $14.40. How many students are in Mr. Finch's class?

- ○ 15
- ○ 17
- ○ 20
- ○ 23
- ● 25

Shade one bubble.

26 There are 26 students in Mrs Block's mathematics class: 14 girls and 12 boys.

6 students were late to class.

If 5 of the students late to class were boys, what is the ratio of Girls to Boys that were on time?

- ○ 14:12
- ○ 5:1
- ○ 9:11
- ● 13:7
- ○ 26:5

Shade one bubble.

27 A triangle that is 25 cm high has an area of 50 cm^2 . The base of the triangle measures:

- ○ 1 cm
- ○ 2 cm
- ● 4 cm
- ○ 8 cm
- ○ 12 cm

Shade one bubble.

28 A bag contains 3 red marbles, 5 white marbles and 2 blue marbles. Two white marbles are drawn from the bag and not replaced.

What is the probability the next marble drawn will be white?

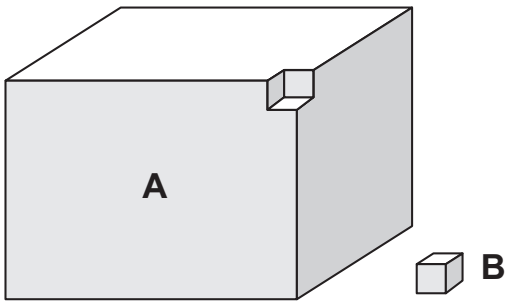
- ○ 5
- ○ 3
- ○ 0.5
- ● 0.375
- ○ 0

Shade one bubble.

29 A solid piece of chocolate (A) measures 20 cm x 10 cm x 15 cm.

A 2 cm cube (B) has been cut from the original block.

The change in surface area for block A is:



Shade one bubble.

- ○ $8cm^2$ more surface area
- ○ $24cm^2$ more surface area
- ○ $24cm^2$ less surface area
- ● No change in surface area
- ○ $8cm^2$ less surface area

30 Tony runs a small catering business that delivers snacks and lunches to local factories.

He asked his customers if they preferred sandwiches or wraps for lunch.

The results are shown in this table.

	Filling	Sandwiches	Wraps
Special 1	Ham and Green Salad	80	45
Special 2	Chicken and Garden Salad	68	32
Special 3	Tuna, Cheese and Tomato	35	50

What is the probability that for Special 3 (Tuna, Cheese and Tomato) a wrap will be chosen?

Shade one bubble.

- ○ $\frac{127}{310}$
- ○ $\frac{5}{31}$
- ○ $\frac{17}{62}$
- ○ $\frac{50}{127}$
- ● $\frac{10}{17}$

END OF TEST

Numeracy Practice Test
Year 9 – Answers

Practice Test 2 – Non-calculator

Student Details

First Name

Last Name

Today's Date is: _____

Test Instructions

You have 40 minutes to complete this test.

You are **NOT** allowed to use a calculator.

You should use a pencil to write your answers or shade in the bubble.

If you make a mistake, rub it out thoroughly.

The following test has been designed by 3P Learning to prepare students for the National Assessment Program Numeracy Test. This test is to be used for revision purposes only. 3P Learning does not guarantee that the format of this test is the same as an actual test.

1 Which of the following numbers does not have 2, 3 and 5 as its factors?

Shade one bubble.

- ○ 30
- ● 85
- ○ 60
- ○ 90
- ○ 120

2 Which of the following numbers is prime?

Shade one bubble.

- ● 2
- ○ 4
- ○ 9
- ○ 27
- ○ 49

3 What is the middle number when these numbers are arranged in ascending order?

Shade one bubble.

- ● –5.306
- ○ –5.4
- ○ –5.36
- ○ –5.04
- ○ –5.3

4 The temperature in the freezer is kept at -16ºC. If the room temperature is 14.3ºC, what is the difference between these temperatures?

Write the answer in the box.

30.3 ºC

5 16 ÷ 0.2 =

Shade one bubble.

- ○ 3.2
- ○ 8
- ○ 32
- ● 80
- ○ 800

6 A laboratory experiment was completed at 10:05 am after taking 2 hours and 43 minutes.

When was the experiment started?

7:22 am

Write the answer in the box.

7 $(5 \times 100) + (6 \times \frac{1}{10}) + (3 \times 1) + (8 \times \frac{1}{100}) + (7 \times 10)$ is equal to:

- ● 573.68
- ○ 57.368
- ○ 57368
- ○ 5736.8
- ○ 563.87

Shade one bubble.

8 Which of the following fractions is closest to $\frac{1}{2}$?

(None of them are EQUAL to $\frac{1}{2}$)

- ○ $\frac{236}{568}$
- ○ $\frac{491}{812}$
- ● $\frac{368}{732}$
- ○ $\frac{268}{134}$
- ○ $\frac{458}{792}$

Shade one bubble.

9 Which one of the following would produce the largest answer?

- ● $10 \div 0.1$
- ○ 10×0.1
- ○ $10 + 0.1$
- ○ $10 - 0.1$

Shade one bubble.

10 I counted the jelly beans in a small packet and found 6 white, 7 red, 4 yellow and 3 black jelly beans.

What is the ratio of the black jelly beans to the yellow jelly beans?

○ 1 : 4 ● 3 : 4 ○ 3 : 7

○ 3 : 17 ○ 3 : 20

Shade one bubble.

11 I counted the jelly beans in a small packet and found 6 white, 7 red, 4 yellow and 3 black jelly beans.

What is the percentage of the jelly beans that are not black?

○ 15% ○ 20% ○ 30%

○ 35% ● 85%

Shade one bubble.

12 $(\sqrt{188 + 37})^2$ is equal to:

○ 12 × 12 ○ 13 × 13 ○ 14 × 14

● 15 × 15 ○ 16 × 16

Shade one bubble.

13 The value of $\sqrt{5000 - 200}$ is closest to:

○ 50 ○ 60 ● 70

○ 80 ○ 240

Shade one bubble.

14 If a computer file repair process is successful 5 out of 7 times, find its percentage success rate (round to the nearest %):

71 %

Write the answer in the box.

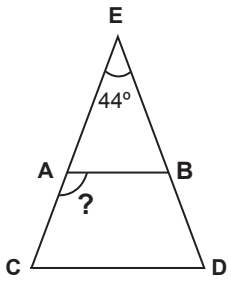
15 Toby loves making models of buildings, especially skyscrapers. He is very proud of his model of a tower that measures 25 cm. His friend Harry has dared him to make a larger model of the same building so that the ratio of the new model to the old model is 3:2.

How tall will the new model be?

- ○ 30 cm
- ○ 32.5 cm
- ○ 35 cm
- ● 37.5 cm
- ○ 40 cm

Shade one bubble.

16 For the isosceles triangle ECD, the line AB is parallel to CD.
If ∠E is 44°, ∠BAC measures:

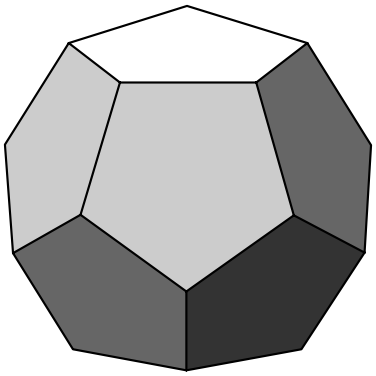


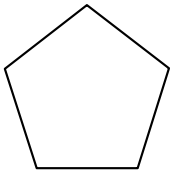
- ○ 44°
- ○ 68°
- ○ 88°
- ● 112°
- ○ 122°

Shade one bubble.

17 A regular dodecahedron consists of 12 identical, regular pentagons on each face. The area of one of these pentagons is 25 cm.

What is the total surface area of the dodecahedron?



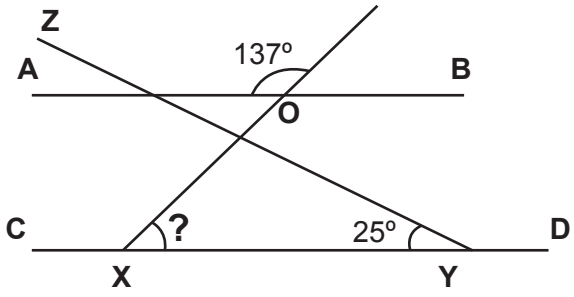


Area = 25 cm^2

- ○ 25 cm^2
- ○ 150 cm^2
- ○ 250 cm^2
- ● 300 cm^2
- ○ 625 cm^2

Shade one bubble.

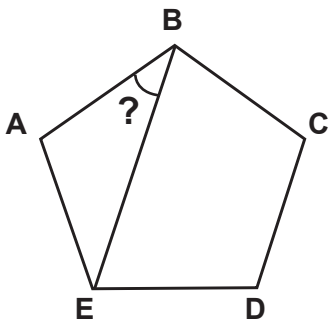
18 AB and CD are parallel lines that are cut by ZY and OX.
Find the value of ∠OXY.



- ○ 25°
- ● 43°
- ○ 57°
- ○ 137°
- ○ 143°

Shade one bubble.

19 ABCDE is a regular pentagon. A line is drawn from B to E.
What is the size of ∠ABE?



- ● 36º
- ○ 54º
- ○ 72º
- ○ 108º
- ○ 144º

Shade one bubble.

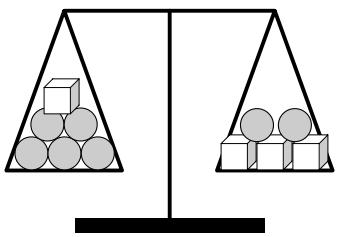
20 John is 2 years older than his sister Amber. Amber is only half of her father's age.

If Amber's father is 50 years old, how old is John?

27

Write the answer in the box.

21 The scales shown in the picture are balanced. If cubes weigh 150 grams each, how much does each sphere weigh?



- ○ 50
- ○ 75
- ● 100
- ○ 125
- ○ 150

Shade one bubble.

22 $\frac{2x + 5}{3} = 30$, the value of x in this equation is:

- ○ 5
- ○ 7.5
- ○ 40
- ● 42.5
- ○ 50

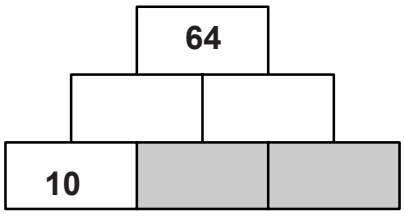
Shade one bubble.

23 The solution to the equation: $3x + 5 = 7x - 11$ is:

$x =$ 4

Write the answer in the box.

24 Each brick is equal to the sum of the bricks it is sitting on. The two grey bricks on the bottom of the pile have exactly the same value. Determine the value of a grey brick.



Grey brick = 18

Write the answer in the box.

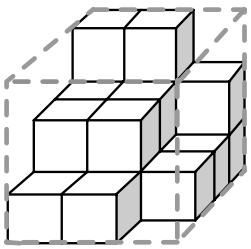
25 $\frac{2x + 5}{3} = 5x + 6$, the value of x in this equation is:

-1

Write the answer in the box.

26 Shirley has been unpacking a container of boxes. The contents of the container are shown in the diagram.

If the container was full, how many boxes has she unpacked so far?



○ 10 ● 16 ○ 20

○ 36 ○ 42

Shade one bubble.

27 The colours of 20 cars in a car park were observed.
There were 5 black, 2 navy, 6 grey, 3 red and the rest were white.

What is the probability that one of these 20 cars, selected at random, is white?

○ $\frac{1}{4}$ ○ $\frac{1}{10}$ ○ $\frac{3}{10}$

○ $\frac{3}{20}$ ● $\frac{1}{5}$

Shade one bubble.

28 A farmer feeds hay and grain to his cattle during the winter months. He buys 3 tonnes of grain each week and allows 20 kg for each cow per day.

What is the maximum number of cows he can feed each week?

Shade one bubble.

- ○ 3 cows
- ○ 7 cows
- ○ 9 cows
- ● 21 cows
- ○ 23 cows

29 Triangle ABC is a right-angled triangle with side AB = 12 cm and the hypotenuse AC = 20 cm.

What is the length of BC ?

- ○ 8 cm
- ○ 10 cm
- ○ 12 cm
- ○ 14 cm
- ● 16 cm

Shade one bubble.

30 Papex Pty Ltd produce paper tissues in boxes shaped as rectangular prisms.

These boxes have dimensions of 16 cm by 5 cm by 4 cm.

They plan to pack these boxes in a 10-box plastic-covered module to sell to shops.

What is the volume of this module?

Shade one bubble.

- ○ 144 cm^3
- ○ 250 cm^3
- ○ 320 cm^3
- ○ 1440 cm^3
- ● 3200 cm^3

END OF TEST

Numeracy Practice Test Year 9 – Answers

Practice Test 3 – Calculator allowed

Student Details

First Name

Last Name

Today's Date is: _____

Test Instructions

You have 40 minutes to complete this test.

You are **allowed** to use a calculator.

You should use a pencil to write your answers or shade in the bubble.

If you make a mistake, rub it out thoroughly.

The following test has been designed by 3P Learning to prepare students for the National Assessment Program Numeracy Test. This test is to be used for revision purposes only. 3P Learning does not guarantee that the format of this test is the same as an actual test.

1 **Calculate 5.238 × 2.1425 and round to 3 decimal places.**

11.222

Write the answer in the box.

2 **Calculate the following and round to 3 decimal places.**

$$\frac{18 \times 2.89}{6 \times 7.45}$$

3.338	7.177	0.859	64.592	1.164
○	○	○	○	●

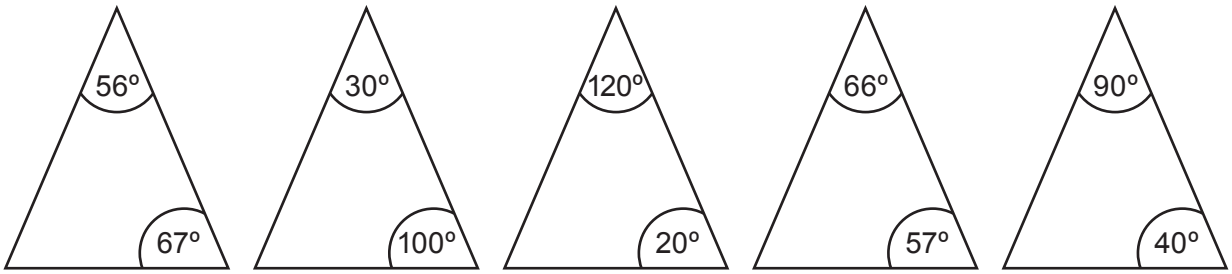
Shade one bubble.

3 **A bag contains only red and blue marbles. There are 48 marbles in total. What is the ratio of red marbles to blue marbles if there are 22 blue marbles in the bag?**

26:22 or 13:11

Write the answer in the box.

4 **Which of the following triangles is not scalene?**



○	○	○	●	○

Triangles not drawn to scale

Shade one bubble.

5 $7^y = 2401$

y = 4

Write one number in the box.

6 **List the following numbers in ascending order of values:**

E = 3.76×10^4

F = 0.0386×10^6

G = 5.92×10^3

H = 0.3×10^5

G, H, F, E	F, G, H, E	G, H, E, F	F, E, H, G	H, E, F, G
○	○	●	○	○

Shade one bubble.

7 **The speed of light is 299 792 458 metres per second. What is a quarter of this speed rounded to the nearest million?**

75 000 000	74 000 000	74 948 115	74 948 114	300 000 000
●	○	○	○	○

Shade one bubble.

8 **Solve for x:** $\dfrac{60x - 20}{16} = 4x - 2$

x = 3

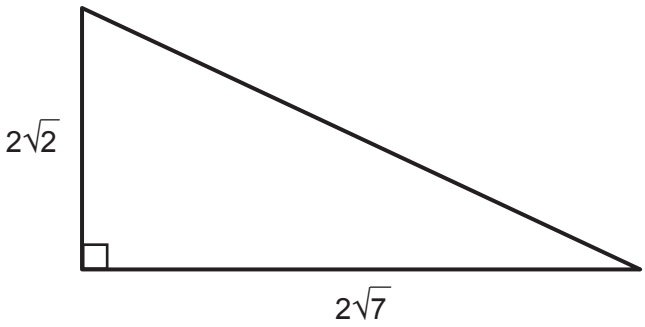
Write one number in the box.

9 **$5.4^2 + \sqrt{17}$ is closest to:**

Shade one bubble.

291	318	6	33	34
○	○	○	●	○

10 **Calculate the length of the hypotenuse.**

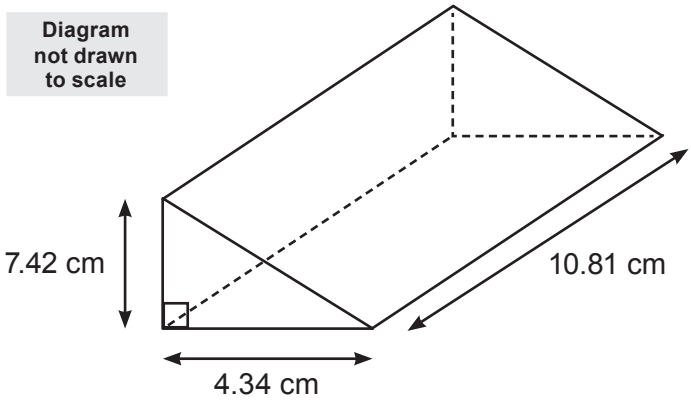


6

Write one number in the box.

11 **Calculate the surface area of the following right-angled triangular prism. (Give your answer to 2 decimal places).**

Diagram not drawn to scale



252.25 cm^2

Write the answer in the box.

12 **The following prism has a volume of 1449 cm^3. What is the height of the prism?**

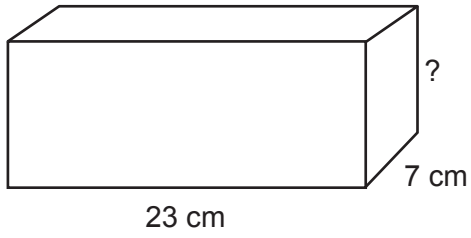


Diagram not drawn to scale

9 cm	441 cm	207 cm	20 cm	14 cm
●	○	○	○	○

Shade one bubble.

13 **Ivan raised $34 for a charity (the highest amount in his class). The rest of the class, made a total of $756, at an average of $28 per student. How many students are in Ivan's class?**

27	28	22	26	126
●	○	○	○	○

Shade one bubble.

14 **Adrian is attempting to solve an equation and the following is his working:**

Line 1: $1 + 2(x + 7) = -5$

Line 2: $2(x + 7) = -6$

Line 3: $2x + 14 = -6$

Line 4: $2x = 8$

Line 5: $x = 4$

Did Adrian make a mistake? If he did, where did he make it?

No mistake	Line 2	Line 3	Line 4	Line 5
○	○	○	●	○

Shade one bubble.

15 **Kaitlyn enters a triathlon at school. In the triathlon she must swim, ride, and run.**

She must swim for x metres. She has to run 3 times as far as she swims, and ride 5 metres more than she swims. If the total length of the triathlon is 1000 m, how far must she ride?

199 m	204 m	600 m	597 m	194 m
○	●	○	○	○

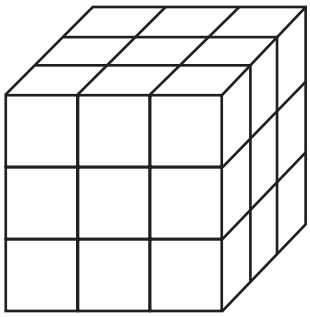
Shade one bubble.

16 $\dfrac{5^6 \times 7^8}{5^3 \times 7^4} =$

$5^2 \times 7^2$	$5^2 \times 7^4$	$5^3 \times 7^2$	5×7	$5^3 \times 7^4$
○	○	○	○	●

Shade one bubble.

17 **The following shape is made of 27 small cubes. How many cubes are completely surrounded by other cubes on all sides?**



- (●) 1
- ( ) 2
- ( ) 3
- ( ) 4
- ( ) None

Shade one bubble.

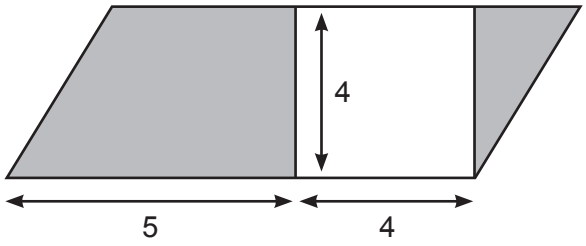
18 **What is the value of the following to the nearest whole number?**

$$\frac{30.21 + 6.4^2}{\sqrt{5.16}}$$

31

Write one number in the box.

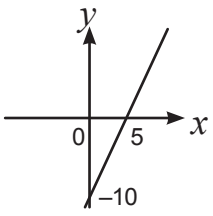
19 **What is the area of the shaded sections in the following shape?**



- ( ) 36 units^2
- (●) 20 units^2
- ( ) 16 units^2
- ( ) 18 units^2
- ( ) 8 units^2

Shade one bubble.

20 **Which one of the following graphs represents $x + 2y = 10$**



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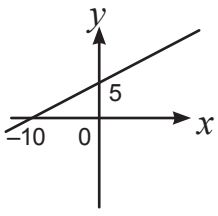

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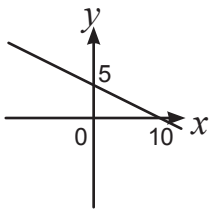
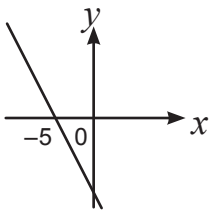


(●)

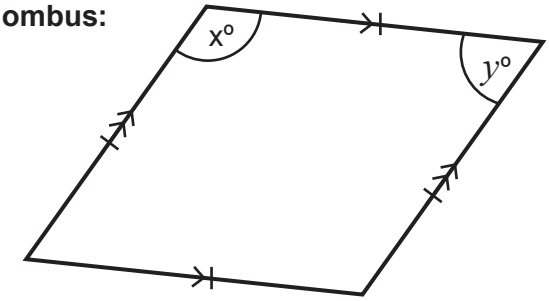
- ( ) None



( )

Shade one bubble.

21 **This is the diagram of a rhombus:**

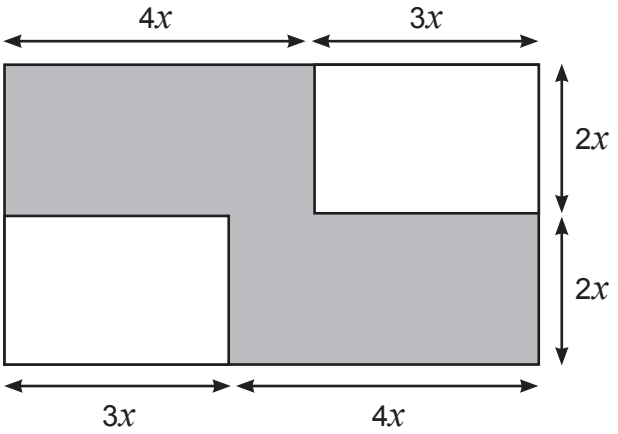


Which of the following are possible values for x and y?

- ○ x = 56.6 y = 113.4
- ○ x = 105 y = 85
- ○ x = 105 y = 65
- ● x = 103.4 y = 76.6
- ○ x = 89.3 y = 100.7

Shade one bubble.

22 **The shaded area of the following shape is 64 cm^2. What is the value of x?**



- ○ 8 cm
- ○ 6 cm
- ○ 12 cm
- ○ 4 cm
- ● 2 cm

Shade one bubble.

23 **The following table represents the probability of selecting certain colours of socks from a cupboard.**

Colour of socks	Red	Blue	Green	Yellow	White
Probability	0.2	0.15	?	0.1	0.35

If these are the only colours of socks available, then what is the probability of selecting a green pair of socks?

0.2

Write one number in the box.

24 **The following table displays the preferred sport for a certain school in each year. If a person was selected at random from all except the senior section, what is the probability they would be a Year 9 student who prefers tennis? (Round to 2 decimal places)**

		Tennis	Soccer
Junior	**Year 7**	25	35
	Year 8	31	27
Middle	**Year 9**	22	40
	Year 10	33	22
Senior	**Year 11**	31	25
	Year 12	30	24

0.09 ● 0.06 ○ 0.35 ○ 0.20 ○ 0.25 ○

Shade one bubble.

25 **The following table displays the amount of people who ordered certain toppings on their pizza. What is the ratio of people who ordered onions to people who did not order onions?**

Pizza toppings	Mushrooms	Tomato	Onions	Olives
Amount sold	80	120	40	60

2:1 ○ 2:13 ● 2:15 ○ 13:2 ○ 1:2 ○

Shade one bubble.

26 **The surface area of a cube is 24 cm^2. How long is each side?**

4 cm ○ 1.59 cm ○ 2 cm ● 2.45 cm ○ 24 cm ○

Shade one bubble.

27 Calculate the value of Q if $Q = \left(\frac{L}{P} - K^N\right)^{\frac{1}{M}}$

and L = 120 000, P = 2.98, K = 0.005, N = –2. M = 5. Round off to 2 decimal places.

3.06

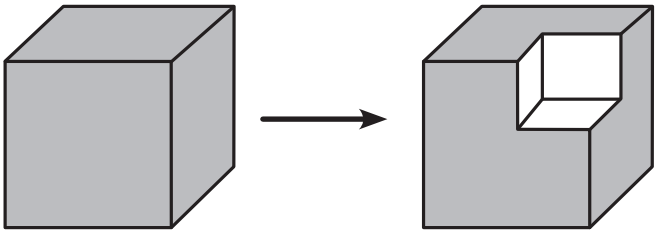
Write one number in the box.

28 Tyler painted a pattern of which a third is blue, and a fifth is red, and a quarter is yellow. On his painting, what is the ratio of blue paint to yellow paint?

4:3	3:4	5:3	3:5	1:3
●	○	○	○	○

Shade one bubble.

29 A 2 cm cube has a 1 cm cube removed from it, as demonstrated by the diagram.

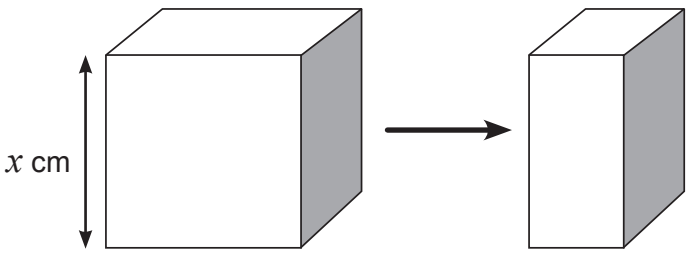


How much does this change the surface area?

8 cm^2	1 cm^2	4 cm^2	0 cm^2	2 cm^2
○	○	○	●	○

Shade one bubble.

30 The cube below is cut in half.



If x = 2 cm, what is the surface area of the new shape?

8 cm^2	4 m^2	24 cm^2	12 cm^2	16 cm^2
○	○	○	○	●

Shade one bubble.

END OF TEST

Numeracy Practice Test Year 9 – Answers

Practice Test 3 – Non-calculator

Student Details

First Name

Last Name

Today's Date is: _____

Test Instructions

You have 40 minutes to complete this test.

You are **NOT allowed** to use a calculator.

You should use a pencil to write your answers or shade in the bubble.

If you make a mistake, rub it out thoroughly.

The following test has been designed by 3P Learning to prepare students for the National Assessment Program Numeracy Test. This test is to be used for revision purposes only. 3P Learning does not guarantee that the format of this test is the same as an actual test.

1 **In the following table, if you were to cross out the prime numbers as well as the odd numbers greater than 21, then what number would remain?**

2	5	7	11
15	17	19	25
27	33	37	39

15

Write one number in the box.

2 **Which one of the following numbers does not have 4, 5 and 6 as factors?**

260 ● 420 ○ 180 ○ 300 ○ 120 ○

Shade one bubble.

3 **Solve for x:** $\frac{10x - 1}{6} = 9$

–5.5 ○ 5.3 ○ –27.5 ○ 11 ○ 5.5 ●

Shade one bubble.

4 $\sqrt{6000}$ **is between**

60 and 70 ○ 70 and 80 ● 65 and 75 ○ 50 and 60 ○ 80 and 90 ○

Shade one bubble.

5 **78% of a backyard is covered in lawn. The area of the lawn is 39 m^2. How big is the entire backyard?**

177.27 m^2 ○ 30.42 m^2 ○ 11 m^2 ○ 50 m^2 ● 8.58 m^2 ○

Shade one bubble.

6 **50 000 adults and children attended a cricket match. If 32 000 were adults, what percentage were children?**

36 %

Write the answer in the box.

7 **In a certain town there are 6 adults for every 4 children. What is the total population if there are 640 children?**

640	1000	1500	960	1600
○	○	○	○	●

Shade one bubble.

8 **Which one of these numbers would be in the middle after being arranged in ascending order?**

Shade one bubble.

1.5352×10^6	0.15353×10^7	1.5452×10^5	15.4532×10^5	1.5362×10^6
○	●	○	○	○

9 **Liam woke up at 7:36 am and went to bed that night 11:13 pm. How many minutes was Liam awake for?**

983	960	937	877	997
○	○	●	○	○

Shade one bubble.

10 **Akhil decides to save money for charity. On the first day he saves $1, on the second day he saves $2, on the third day he saves $4, and each new day he saves double what he saved the day before. How much money does he save after one week?**

$ 127

Write the answer in the box.

11 **11.372 – 1.693 = ?**

8.679	9.679	9.671	10.671	10.679
○	●	○	○	○

Shade one bubble.

12 **32 ÷ 0.04 = ?**

8	0.8	800	80	0.08
○	○	●	○	○

Shade one bubble.

13 **Consider this triangle.**

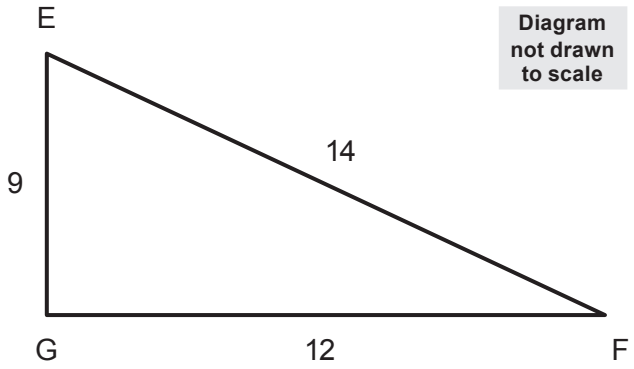


Diagram not drawn to scale

What can we say about angle ∠EGF?

- ● Between 0° and 90°
- ○ Exactly equal to 90°
- ○ Between 90° and 180°
- ○ Exactly equal to 180°
- ○ Bigger than 180°

Shade one bubble.

14 **$7x - 5(x - 3)$ =**

$2x + 15$	$2x - 15$	$2x + 3$	$2x - 3$	$12x + 15$
●	○	○	○	○

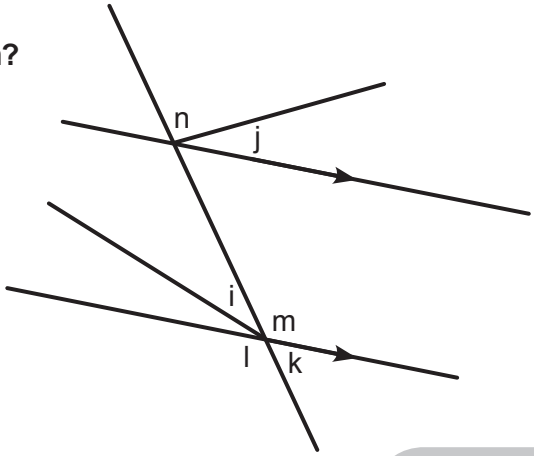
Shade one bubble.

15 **A container contains green and yellow marbles. The ratio of green marbles to yellow marbles is 4:7. If there are 44 marbles in the container, how many yellow marbles are there?**

16	28	4	7	11
○	●	○	○	○

Shade one bubble.

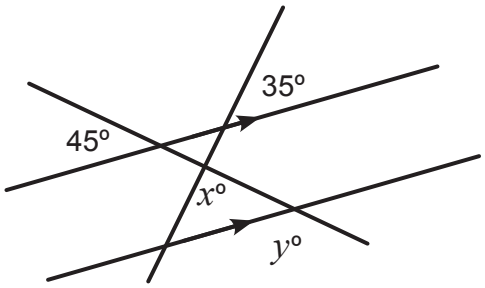
16 **Which angle is supplementary to m?**



i	n	j	l	k
○	○	○	○	●

Shade one bubble.

Use the following diagram for questions 17 and 18



17 **What is the size of angle y?**

180°	145°	35°	135°	45°
○	○	○	●	○

Shade one bubble.

18 **What is the size of angle x?**

70°	80°	90°	110°	100°
○	○	○	○	●

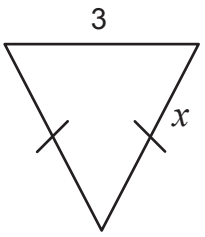
Shade one bubble.

19 **Which of these numbers is the largest?**

1 ÷ 0.1	1 × 0.1	10 × 0.1	10 ÷ 0.1	100 × 0.1
○	○	○	●	○

Shade one bubble.

20 **The following Isosceles triangle has perimeter 11 cm. What is the value of x?**



5	8	4	14	2
○	○	●	○	○

Shade one bubble.

21 **Rania planted a garden using 4 different colours of flowers: red, blue, yellow and orange. If $\frac{1}{3}$ of the flowers are red, $\frac{1}{4}$ of the flowers are blue and $\frac{1}{10}$ of the flowers are yellow, then how many flowers are orange?**

$\frac{19}{60}$

Write the answer in the box.

22 **A school play is attended by adults and students. It costs $5 for students and $10 for adults. The total of all ticket sales was $775. If 83 students attended, how many adults attended?**

36

Write one number in the box.

23 **A parking lot can fit 4 cars for every 6 metres. If each floor is 120 metres long and there are 5 floors, how many cars are there when the parking lot is full?**

400

Write one number in the box.

24 Solve for x: $\frac{12x - 9}{6} + 2x + 1 = 3x + 2$

2.5	–5	3.5	–2	4.5
●	○	○	○	○

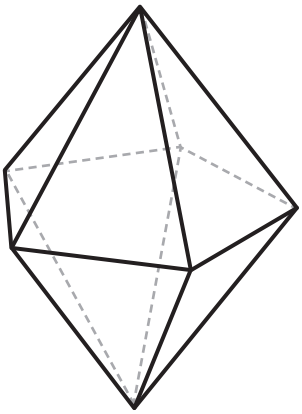
Shade one bubble.

25 Sarah is 6 years older than triple Lisa's age. While Thanh is 2 years younger than half of Sarah's age. The total of Sarah's, Lisa's and Thanh's ages is 106. How old is Lisa?

18

Write one number in the box.

26 What is the surface area of the following decahedron?



Each face of the decahedron looks like this:

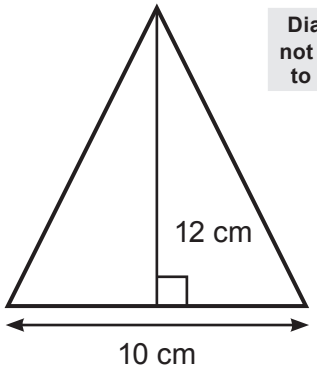


Diagram not drawn to scale

60 cm^2	120 cm^2	600 cm^2	1 200 cm^2	720 cm^2
○	○	●	○	○

Shade one bubble.

27 The following table represents a sports preference in a certain school. If a year is selected at random, what is the probability that there will be more tennis players than soccer players?

		Tennis	Soccer
Junior	Year 7	25	35
	Year 8	31	27
Middle	Year 9	22	40
	Year 10	33	22
Senior	Year 11	31	25
	Year 12	30	24

$\frac{172}{345}$ ○ $\frac{2}{3}$ ● $\frac{1}{3}$ ○ $\frac{173}{345}$ ○ $\frac{172}{173}$ ○

Shade one bubble.

28 Which of these expressions has the same value as $3\sqrt{3} + 9$?

Shade one bubble.

$\sqrt{3}(\sqrt{9} + 3\sqrt{3})$ ● $\sqrt{3}(\sqrt{9} + 3)$ ○ $3(\sqrt{9} + 3\sqrt{3})$ ○ $\sqrt{3}(\sqrt{9} + \sqrt{3})$ ○ $\sqrt{3}(3\sqrt{9} + 3\sqrt{3})$ ○

29 The following is folded to form a rectangular box. What is the volume of this newly formed box?

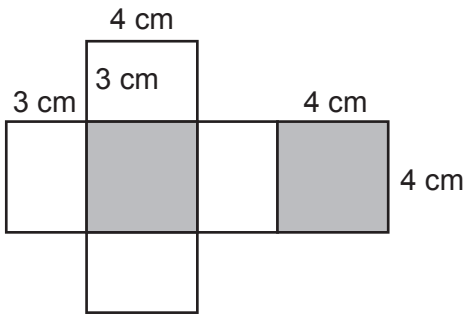


Diagram not drawn to scale

$9\ cm^3$ ○ $16\ cm^3$ ○ $14\ cm^3$ ○ $36\ cm^3$ ○ $48\ cm^3$ ●

Shade one bubble.

30 What is the ratio of the volume of a cube of side length 2 cm to the volume of a cube of side length 4 cm?

1:2 ○ 2:1 ○ 1:4 ○ 4:1 ○ 1:8 ●

Shade one bubble.

END OF TEST

